

## Surviving Alice Gone Wild

by John Kong<sup>1</sup>

Before the Supreme Court's decision in *Alice Corp. v CLS Bank Int'l*<sup>2</sup>, Judge Moore said “this case is the death of hundreds of thousands of patents, including all business method, financial system, and software patents as well as many computer implemented and telecommunications patents.”<sup>3</sup> This concern is premised on about twenty years of patent practice grounded in the *en banc* 1994 Federal Circuit decision in *In re Alappat* which previously established the “special purpose computer” justification for patent eligibility under 35 USC §101 for computer-implemented inventions.<sup>4</sup> The *Alice* decision essentially eliminated the “special purpose computer” bright line rule as applied generally to computer-implemented inventions. The new *Mayo* 2-part §101 test for computer-implemented inventions is, however, fraught with issues from the lack of guidance on how to properly apply it. Some strategic arguments for surviving a §101 attack are presented in this article, as well as a new way to address what is “significantly more.”

### **I. Alappat Dead? – Maybe Not**

The *Alappat* decision addressed the earlier Supreme Court §101 decisions in *Gottschalk v Benson*, *Parker v. Flook*, and *Diamond v. Diehr*, and came up with the rationale that “programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software” and that “a computer operating pursuant to software may represent patentable

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<sup>2</sup> 573 U.S. \_\_\_, 134 S. Ct. 2347 (2014).

<sup>3</sup> *CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1313 (Fed. Cir. 2013) (Moore, J., dissenting), *aff'd sub no. Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014).

<sup>4</sup> *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (*en banc*).

subject matter.”<sup>5</sup> Although this reasoning stemmed from means-plus-function (MPF) claim elements in *Alappat*’s claim, patent practitioners extended this rationale generally to computer-implemented inventions, regardless of the existence of MPF claim elements. In the pre-*Alice en banc* Federal Circuit decision, Judge Rader’s four-judge dissenting opinion relied on *Alappat* and supported the patent eligibility of Alice’s system claims.<sup>6</sup> Judge Lourie’s five-judge concurring opinion refuted *Alappat* and did not support the patent eligibility of Alice’s system claims because “the legal world has changed” and “[t]he Supreme Court has spoken since *Alappat* on the question of patent eligibility.”<sup>7</sup>

When the Supreme Court decided *Bilski*<sup>8</sup> in 2010, patent practitioners questioned whether the *Bilski* decision answered the question as to apparatus claims because *Bilski* was directed to a method claim. The rationale of *Alappat* was also thrown into question because the *Bilski* Supreme Court said “nothing in today’s opinion should be read as endorsing interpretations of §101 that the Court of Appeals for the Federal Circuit has used in the past.”<sup>9</sup> When the Supreme Court decided *Mayo*<sup>10</sup> in 2012, patent practitioners questioned whether the *Mayo* decision, addressing the Federal Circuit’s machine or transformation test and claims directed to biotechnology, applied to computer-implemented claims.

This year’s *Alice* decision finally addressed §101 for computer-implemented inventions, and effectively overturned twenty years of thinking based on *Alappat*’s special purpose computer justification for patent eligible subject matter. *Alice* makes clear that a computer *is* recognized as a machine which would fall under one of the statutory categories under §101.<sup>11</sup> But that isn’t the

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<sup>5</sup> *Id.*

<sup>6</sup> *CLS Bank*, 717 F.3d at 1305 (Rader, J., dissenting).

<sup>7</sup> *Id.* at 1292.

<sup>8</sup> *Bilski v. Kappos*, 130 S. Ct. 3218 (2010).

<sup>9</sup> *Id.* at 3231.

<sup>10</sup> *Mayo Collaborative Servs. V. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

<sup>11</sup> *Alice*, 134 S. Ct. at 2358-59.

end of the inquiry under §101.<sup>12</sup> Instead, the *Mayo* 2-part test applies to computer-implemented subject matter.<sup>13</sup> The game-changing new rationale, contrary to *Alappat*, is that “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”<sup>14</sup> Simply “doing it” on a generic computer isn’t enough to satisfy §101.<sup>15</sup>

But, it is premature to say that *Alappat* is dead. *Alappat* specifically addressed the §101 issue for a claim containing means-plus-function (MPF) claim elements.<sup>16</sup> In the *en banc* Federal Circuit *Alice* decision, Judges Rader and Moore mentioned that there were MPF claim elements in some of Alice’s dependent claims.<sup>17</sup> But, the Supreme Court ignored the issue involving MPF claim elements. There are no Supreme Court decisions to date that specifically addresses the §101 question as it applies to a claim including an MPF claim element, like in *Alappat*. The distinction is important because the statutory definition of MPF claim elements is governed by 35 USC §112(f) or pre-AIA 35 USC §112, sixth paragraph. Interpretive case law from the Federal Circuit, such as in *Aristocrat*, defines a computer-implemented MPF claim element as including the algorithm disclosed in the specification for performing the claimed function.<sup>18</sup>

The *Alice* Supreme Court questioned Alice’s counsel during oral arguments about where is or what is the “software” for his claimed invention. Counsel’s admission that none was disclosed and that someone in a coffee shop in Silicon Valley could write the code over a weekend hurt Alice’s case.<sup>19</sup> To the extent software or algorithm imparts advantages in the patent eligibility inquiry, MPF claim elements pull in the disclosed algorithm by definition. Therefore, there are

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<sup>12</sup> *Id.* at 2359.

<sup>13</sup> *Id.* at 2355.

<sup>14</sup> *Id.* at 2358.

<sup>15</sup> *Id.*

<sup>16</sup> *Alappat*, 33 F.3d at 1539.

<sup>17</sup> *CLS Bank*, 717 F.3d at 1309 (Rader J., dissenting), 1316 (Moore J., dissenting).

<sup>18</sup> *Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1337-38 (Fed. Cir. 2008).

<sup>19</sup> *Alice* oral argument, p.12

advantages to utilizing MPF claim elements. And if the concern is about the scope of protection provided by an MPF claim element, how the specification discloses the corresponding structure and algorithm addresses that issue.

## **II. New Battle Grounds**

For computer-implemented inventions, *Mayo*'s two part §101 test applies:

1) determine whether the claims at issue are directed to one of the patent-ineligible concepts; and

2) if yes, then is there an “inventive concept”? – does the claim include an element or a combination of elements that is sufficient to ensure that the claim amounts to significantly more than a claim to the ineligible concept itself.<sup>20</sup>

For §101 step 1, the Supreme Court avoided addressing the “precise contours of the ‘abstract ideas’ category in this case.”<sup>21</sup> Instead, the Court noted examples of a patent-ineligible abstract idea including fundamental/longstanding economic practices, certain methods of organizing human activity, an idea of itself, and mathematical relationships/formulas.

For §101 step 2, the Supreme Court provides examples of what is *not* “significantly more:”

- simply stating the abstract idea and adding “apply it” (*Mayo*) or “apply it with a computer” (*Bilski, Alice*);
  - simply appending conventional steps, specified at a high level of generality (*Mayo*);
  - simply implementing a mathematical principle on a computer (*Benson*);
  - limiting use of the abstract idea to a particular technological environment (*Flook*);
- and

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<sup>20</sup> *Alice*, 134 S. Ct. at 2355.

<sup>21</sup> *Id.* at 2357.

- generic computer implementation of the abstract idea (*Bilski, Alice*).

For examples of what may constitute “significantly more,” the Supreme Court noted:

- improving another technology or technical field – e.g., *Diehr’s* use of a mathematical equation in a process for determining when to open a mold in a rubber-molding process designed to solve a technological problem in the conventional industry practice;
- improving the function of the computer itself; and
- meaningful limitations beyond generally implementing the abstract idea via a computer (or otherwise generally linking it to some technology).

However, there are significant issues in these tests and examples. What type of “abstract idea” qualifies for §101 step 1? How do we determine whether something is “significantly more?” What is a “meaningful limitation?” “Significant” or “meaningful” to who? In the search for the “*inventive* concept,” what are “well-known,” “routine,” or “conventional” activities that are to be considered? What is a “generic” computer or “generic” computer functionality? “Generic” when? What is the standard of review?

### **III. Surviving §101 Step 1**

Given the lack of guidance in applying §101 step 1, the following seven strategies should be considered for addressing §101 step 1:

1. ensure that a “patent ineligible” abstract idea is identified for §101 step 1 that is directed to a fundamental principle/truth, building block of human ingenuity, or basic tool of scientific and technological work

2. ensure that there is a reasoned link between the asserted abstract idea and the actual claimed features
3. ensure that some evidentiary support is provided to show that the identified patent ineligible abstract idea is indeed something fundamental, a building block, or a basic tool of science/technology
4. check if the claim satisfies the Federal Circuit's machine or transformation test (MoT test)
5. are there claimed features that cannot be done solely by a human, in one's mind, or by paper and pencil
6. argue for an abstract idea that is defined at a high level of generality, i.e., as abstract as possible
7. during patent prosecution, determine if the examiner might be relying on his/her personal knowledge regarding the abstract idea being a fundamental principle, building block, or basic tool; and if so, request an affidavit/declaration of that personal information relied upon

A. "Patent Ineligible" Abstract Idea Must Be Fundamental, Building Block, or Basic Tool

With regard to computer-implemented inventions, the issue generally involves whether there is a patent ineligible abstract idea, or whether the claim is directed to a mathematical formula/calculation. However, what is sometimes dropped from the abstract idea question is the "patent ineligible" aspect.

For example, the initial June 25, 2014 USPTO Preliminary Examination Instructions in view of the *Alice* decision refers to this "Part 1" §101 analysis as "determin[ing] whether the claim

is directed to an abstract idea.”<sup>22</sup> There is no reference to a “patent ineligible” abstract idea. This reflects a fundamental misunderstanding of the Supreme Court’s *Mayo* step 1. As the Supreme Court recognized, every invention can be characterized at some level as an abstract idea. §101 step 1 is not asking to simply identify an abstract idea. This is why the Supreme Court stated *Mayo*’s step 1 is to “determine *whether* the claims at issue are directed to one of those *patent-ineligible* concepts” – not “determine *what* is the abstract idea.” If the question is simply asking what is the abstract idea, every single patent claim would satisfy §101 step 1 as being directed an abstract idea at some level of abstraction – which is why the Supreme Court cautioned that “we tread carefully in construing this exclusionary principle lest it swallow all of patent law.”<sup>23</sup>

The judge made exception to §101 for laws of nature, natural phenomena, and abstract ideas exists because a patent on these would impede innovation more than promote it, contrary to the primary objective of patent law. As the Supreme Court emphasized, we must distinguish between claims to the building blocks of human ingenuity versus those that integrate the building blocks into something more.<sup>24</sup> The former would risk pre-empting or disproportionately tying up the use of the underlying ideas – to the detriment of progress in the useful arts.<sup>25</sup> Basically, the purpose of the *Mayo* test is to ensure that patent law not inhibit further discovery by preempting or improperly tying up the future use of building blocks of human ingenuity.<sup>26</sup>

The key point in §101 step 1 is whether the claim is directed to a *patent ineligible* abstract idea. The Supreme Court clarifies such *patent ineligible* abstract ideas as those directed to fundamental principles/truths, building blocks of human ingenuity, and basic tools of scientific

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<sup>22</sup> The USPTO’s anxiously anticipated update to these initial guidelines should be issuing soon.

<sup>23</sup> *Id.* at 2354.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

and technological work. Claims to such fundamental truths, building blocks, and basic tools impede innovation, rather than promote it. Therefore, the first line of defense is to ensure that a “patent ineligible” abstract idea is identified for §101 step 1 that is directed to the specific type of “patent ineligible” abstract idea that “accords with the preemption concern that undergirds our §101 jurisprudence”<sup>27</sup> – namely, a fundamental principle/truth, building block of human ingenuity, or basic tool of scientific and technological work.

An example of this first line of defense can be found in *Helios Software*.<sup>28</sup> There, the court held that the asserted claims are not drawn to patent-ineligible subject matter in part because the defendant “makes no effort to show that [the asserted abstract ideas] are fundamental truths or fundamental principles the patenting of which would pre-empt the use of basic tools of scientific and technological work.”<sup>29</sup> Similarly, in *PNC Bank*, a CBM review was not instituted for §101 because the PTAB panel held that there was no §101 step 1 abstract idea.<sup>30</sup> Looking at the claim as a whole, the PTAB panel held that the claim “relates to a computer-implemented method to transform data in a particular manner – by inserting an authenticity key to create formatted data, enabling a particular type of computer file to be located and from which an authenticity stamp is retrieved.”<sup>31</sup> As such, the claim as a whole was not directed to any “method of organizing human activity,” “fundamental economic practice long prevalent in our system of commerce,” nor “a building block of the modern economy.”

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<sup>27</sup> *Id.* at 2358.

<sup>28</sup> *Helios Software, LLC. v. Spectorsoft Corp.*, 2014 U.S. Dist. LEXIS 135379 (D. Del, Sept. 18, 2014).

<sup>29</sup> *Id.* at \*53.

<sup>30</sup> *PNC Bank v Secure Axxess, LLC.*, CBM 2014-00100, p.23 (PTAB, Sept. 9, 2014).

<sup>31</sup> *Id.* at p.20.



## B. Abstract Idea Tied to Claim Language

The *PNC* panel went further to point out that the petitioner did not adequately tie claim language to the alleged abstract concept of placing a trusted stamp or seal on a document.<sup>32</sup> This is a second line of defense for §101 step 1, which is to ensure that there is a reasoned link between the asserted abstract idea and the actual claimed features. In *PNC*, the claim language does not “place” any stamp on any paper document. Quite the contrary, the claim retrieves an authenticity stamp from data and creates formatted data in a web page, not a paper document. Therefore, the asserted abstract idea is not adequately tied to the actual claim language.

## C. Evidentiary Support that the Abstract Idea is Fundamental/Building Block/Basic Tool

A third line of defense for §101 step 1 is to ensure that some evidentiary support is provided to show that the identified patent ineligible abstract idea is indeed something fundamental, or a building block/basic tool of science/technology. The Supreme Court cited three references (one from 1896) in support of the assertion that the patent ineligible abstract idea of “intermediated settlements” was a fundamental economic practice and a building block of modern economy.<sup>33</sup> In *PNC*, the PTAB panel found that the petitioner did not provide *sufficient persuasive evidentiary support* that the asserted abstract idea is a “fundamental economic practice” or a “building block of the modern economy.”<sup>34</sup> Likewise, in *Helios*, the court noted that the defendant provided *no support* for the assertion that the asserted abstract idea of “remotely monitoring data associated with an Internet session” or “controlling network access” were fundamental principles in the ubiquitous use of the internet or computers in general.<sup>35</sup>

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<sup>32</sup> *Id.* at p.21.

<sup>33</sup> *Alice*, 134 S. Ct. at 2356.

<sup>34</sup> *PNC Bank*, CBM 2014-00100 at p.21.

<sup>35</sup> *Helios Software*, 2014 U.S. Dist. LEXIS 135379 at \*54.

#### D. Machine or Transformation

A fourth line of defense for §101 step 1 is to consider if a case can be made to satisfy the Federal Circuit's machine or transformation test (MoT test). Although the *Bilski* Supreme Court decision held that the MoT test is not the sole test for determining §101 patent eligibility, it is still a useful tool for the §101 analysis.<sup>36</sup> The "machine" aspect of this test may be more difficult to satisfy with just claimed features to a generic computer in view of *Alice*. But one case so far that met the "machine" aspect was in *Helios*, where the court found the claims tied to a machine because claimed features directed to exchanging data over different internet sessions to capture the content of an ongoing internet communication session were meaningful limitations that tied the claimed method to a machine.<sup>37</sup> As for the "transformation" prong of the MoT test, the typical issue in computer implemented inventions is overcoming the rule from *CyberSource*, a 2011 Federal Circuit case holding that the mere collection, organization, manipulation or reorganization of data does not satisfy the transformation prong of the MoT test.<sup>38</sup> However, in *Card Verification*, the court distinguished *CyberSource*, saying "the claimed invention goes beyond manipulating, reorganizing, or collecting data by actually adding a new subset of numbers or characters to the data, thereby ***fundamentally altering*** the original confidential information."<sup>39</sup> In *PNC*, the PTAB panel found the claim met the transformation prong of the MoT test because "[t]he claim language requires '***transforming***' one thing ('received data') 'to create' something else ('formatted data') and further recites a particular manner of transforming ('by inserting an authenticity key')."<sup>40</sup>

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<sup>36</sup> *Bilski*, 130 S. Ct. at 3227.

<sup>37</sup> *Helios Software*, 2014 U.S. Dist. LEXIS 135379 at \*54-55.

<sup>38</sup> *Cybersource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 & 1375 (Fed. Cir. 2011).

<sup>39</sup> *Card Verification Solutions, LLC v Citigroup Inc.*, 2014 U.S. Dist. LEXIS 137577, \*13 (N.D. Ill., Sept. 29, 2014).

<sup>40</sup> *PNC Bank*, CBM 2014-00100 at p.24.

Therefore, claimed features that “fundamentally alter” data or “transform” the data goes beyond the proscription against mere collection, organization, manipulation, or reorganization of data.

E. Claimed Limitations That Cannot Be Done By a Human, In Mind, Or By Pen and Paper

A fifth line of defense for §101 step 1 is if an argument can be made that claimed features cannot be done solely by a human, in one’s mind, or by pen and paper – a fact that goes against the claim being directed to a patent ineligible abstract idea. For example, in *Helios*, the court noted that the parties conceded that none of the claimed limitations, directed to access configurations and communication protocols that control computer network access and monitoring activity, could be performed by a human alone.<sup>41</sup> In *PNC*, the PTAB panel distinguished *CyberSource* because CyberSource’s claim was patent ineligible not merely because of manipulation and reorganization of data, but also because it could be performed in the human mind – which was not possible in *PNC*.<sup>42</sup> In *US Bancorp*, CBM review was not instituted for §101 review because there was no patent-ineligible abstract idea, primarily because the claim as a whole was directed to processing paper checks with limitations including receiving paper checks, scanning the paper checks with a digital scanner, and comparing the digital images by a computer.<sup>43</sup> These limitations go against the claim being an abstract idea, because they require paper checks, a digital scanner, digital images, and comparison of the digital images – all features that cannot be done just by a human, in one’s mind, or by paper and pencil. In *Card Verification*, the claims survived a §101 challenge in a motion to dismiss on the pleadings. Part of the court’s justification was that “[h]ere, an entirely

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<sup>41</sup> *Helios Software*, 2014 U.S. Dist. LEXIS 135379 at \*55.

<sup>42</sup> *PNC Bank*, CBM 2014-00100 at p.22.

<sup>43</sup> *US Bancorp v Solutran, Inc.*, CBM2014-00076 (PTAB, August 7, 2014).

plausible interpretation of the claims include a limitation requiring pseudorandom tag generating software that could not be done with pen and paper.”<sup>44</sup>

#### F. Defining the Patent Ineligible Abstract Idea at a High Level of Generality

A sixth consideration for §101 step 1 is to find the “right” level of abstraction. Knowing that §101 step 2 will be searching for some claimed features that are “significantly more” than the patent ineligible abstract idea, an abstract idea defined at a high level of generality, i.e., as abstract as possible, would help the search for claimed features constituting “significantly more” than the defined abstract idea. Stated differently, if the patent ineligible abstract idea was defined in §101 step 1 to be essentially all the claimed features, there would be nothing left to constitute “significantly more” in §101 step 2.

Take, for example, the abstract idea identified by the examiner in *Ex Parte Cote*.<sup>45</sup> One of the independent claims at issue was “a method of using clusters in electronic design automation, the method comprising: receiving data for a plurality of bins, each bin including a plurality of clusters, each cluster representing a plurality of shapes in an original layout, the plurality of shapes having a proximity to each other determined by a grow operation; and using a computer, preparing a phase shifting layout for the original layout by phase shifting each of the plurality of clusters independently of one another.” The abstract idea identified by the examiner was essentially the entire claim: “independently phase shifting each of a plurality of clusters which each represent a plurality of shapes having a proximity to each other determined by a grow operation.” With such a narrowly defined abstract idea, it comes as no surprise that there was nothing left in the claim that could be “significantly more” than that abstract idea.

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<sup>44</sup> *Card Verification*, 2014 U.S. Dist. LEXIS 137577 at \*12.

<sup>45</sup> *Ex Parte Cote*, Appeal 2012-010730 (PTAB Sept. 3, 2014, App. S/N 12/352,538).

*Ex Parte Cote* is an example of *Alice* gone wild, where the alleged abstract idea was essentially all the claimed limitations. Why isn't the abstract idea in *Cote* "electronic design automation?" If so, a better case of "significantly more" can be presented for *Cote's* invention of "preparing a phase shifting layout for the original layout by phase shifting each of the plurality of clusters independently of one another." Basically, the starting point for comparison from §101 step 1 makes a difference in §101 step 2. Moreover, rarely would a narrowly defined abstract idea, repeating the entire claim, constitute the type of patent ineligible abstract idea that is a fundamental principle/truth, building block of human ingenuity, or basic tool of science and technology. Perhaps the abstract idea of electronic design automation could be a basic tool of technology, but not the entire claim, with all the detailed limitations.

#### G. Challenging Examiner's Reliance on Personal Knowledge

A seventh consideration for §101 step 1 exists during patent prosecution. If no evidentiary support is cited for establishing the alleged patent ineligible abstract idea as being a fundamental principle/truth, building block of human ingenuity, or basic tool of science and technology, then the examiner could be said to be relying on his/her personal knowledge on that point. To the extent the Examiner relies on his/her personal knowledge about how the asserted abstract idea is a "fundamental" truth/principle, "building block of human ingenuity," or some "basic tool of science or technology," the examiner should be requested, pursuant to 37 CFR 1.104(d)(2) and MPEP 2144.03(C), to provide an affidavit or declaration setting forth specific factual statements regarding his personal knowledge about how such an alleged abstract idea is a "fundamental" truth/principle, "building block of human ingenuity," or some "basic tool of science or technology."

#### IV. Surviving §101 Step 2

If the claim is directed to a patent ineligible abstract idea, then the second step in the §101 analysis is to look at the claimed elements individually and looking at the claim as a whole to determine if there are additional elements that transform the claim into a patent eligible application of the abstract idea. This is also characterized as a search for an “inventive concept,” *i.e.*, an element or combination of elements that ensures the patent in practice amounts to significantly more than a patent on the ineligible abstract idea itself. In *Alice*, the Court looked at claimed elements individually to see if it was merely “conventional.”<sup>46</sup> The concern is that “[s]imply appending *conventional* steps, specified at a high level of generality, was not enough to supply an inventive concept.”<sup>47</sup> Generally linking the abstract idea to implementation on a generic computer or reciting generic computer components is not enough.<sup>48</sup> In addressing these issues, the following three strategies should be considered for addressing §101 step 2:

1. use cited prior art as the basis for comparison to argue “significantly more”
2. highlight any technical problems solved in the same or different technology
3. highlight any specific software or algorithm that is part of the invention

##### A. Use Cited Prior Art As Basis For Comparison to Argue “Significantly More”

Searching for the “inventive concept” is problematic. Determining “significantly more” is problematic. Assessing whether mere “conventional” features are being appended to the abstract idea is problematic. There is the insufficient guidance in resolving these questions. One

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<sup>46</sup> *Alice*, 134 S. Ct. at 2359.

<sup>47</sup> *Id.* at 2357.

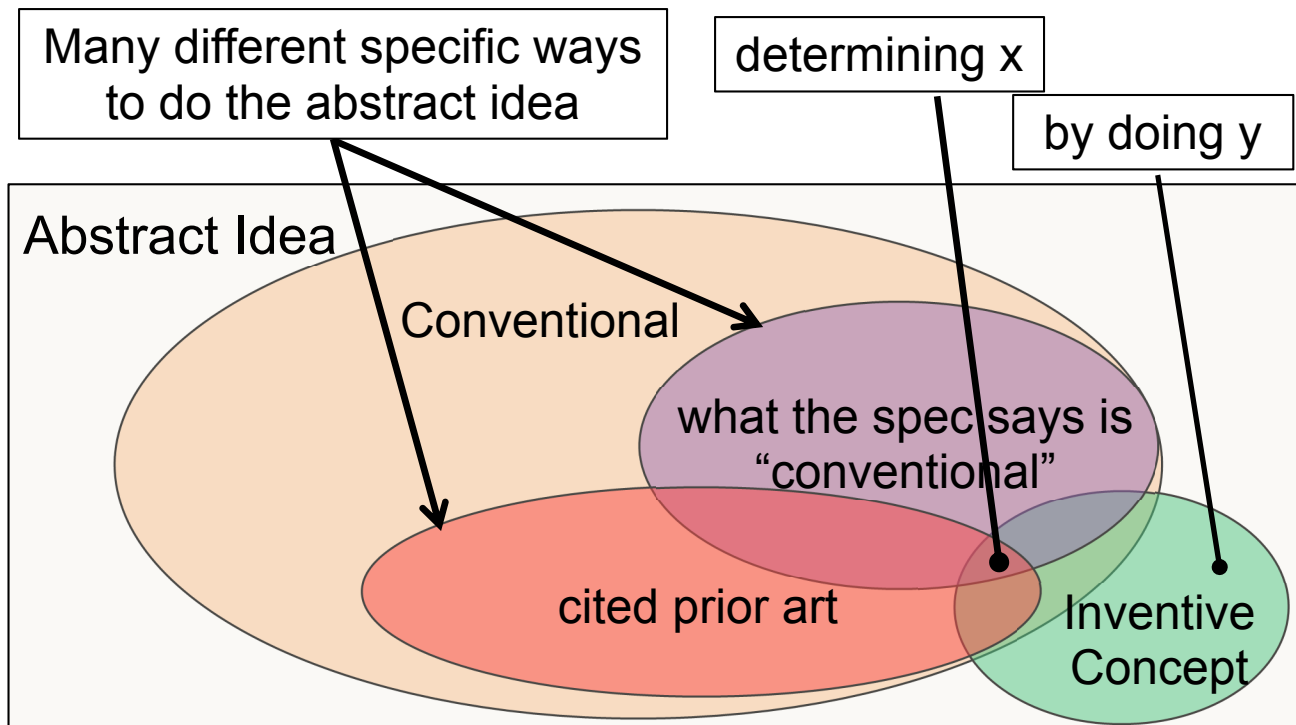
<sup>48</sup> *Id.* at 2360.

fundamental problem is the lack of a basis for comparison. On this point, I propose a new framework.

The Supreme Court has now, at least twice (*Mayo*, *Alice*), reinforced the potential overlap between §101 and novelty in searching for the “inventive concept” and whether there is “significantly more” beyond the abstract idea. Don’t fight it. Take advantage of it. The overlap between §101 and novelty justifies the use of cited prior art as the basis for comparison for §101 step 2. Patentability already requires the claimed invention to distinguish over cited prior art, so there is no demerit for turning §101 step 2 into a modified prior art analysis.

There may be admitted prior art, or disclosures of “conventional” art, in a patent specification. There is almost certainly prior art cited by the examiner. If a “correct” patent ineligible abstract idea is identified in §101 step 1, it should be at a high level of generality (something fundamental, building block, or basic tool). If so, the cited prior art is “more” or narrower than the abstract idea since the cited prior art identifies different specific ways for carrying out or achieving that abstract idea defined at a high level of generality. Next, dovetailing off the claimed limitations that distinguish over the cited prior art (satisfying 35 USC §§102 and 103), the claim, with those distinguishing features, is “more” or narrower than the cited prior art. So, if the cited prior art is “more” than the abstract idea, and the claimed invention is “more” than the cited prior art, the claimed invention must be “significantly more” than the abstract idea, i.e., claimed invention > cited prior art > abstract idea, so claimed invention >> abstract idea. The essence of this new framework is to use cited prior art (and/or admitted prior art) as a basis for comparison, so that the claimed limitations that distinguish over the cited prior art (for §§102 and 103) can be used to demonstrate how the claimed invention is “significantly more” than the patent ineligible abstract idea.

In terms of the policy behind §101, there is no pre-emption or disproportionate tying up because the cited prior art and/or the admitted prior art describes many different specific ways of doing/carrying out/achieving the patent ineligible abstract idea, and the claimed invention, distinguishing over that cited prior art, identifies yet another specific way of carrying out the patent ineligible abstract idea. This can be illustrated as follows:



In this hypothetical, the claimed invention is some computer-implemented feature that determines x by doing y in some technological field. The “determining x” component is conventional. The invention is in determining x “by doing y.” To survive §101 step 2, it can be said that the various cited prior art and whatever the specification admits to be “conventional” constitute many different specific ways to perform the patent ineligible abstract idea. Such prior art specific ways of doing the abstract idea are “more” than simply the abstract idea itself. And, to the extent that the claimed invention distinguishes over the cited prior art (for the reasons set



forth elsewhere addressing §§102 and 103), the claimed invention is another different specific way of doing the abstract idea, “more” than the cited prior art, and therefore “significantly more” than the abstract idea.

It is not necessary to repeat the entire arguments under §§102 and 103 because those statutory requirements involve different standards. In other words, it is not necessary to argue non-obviousness, for example, under the §101 analysis. Instead, it is sufficient to let the §101 argument focus on the claimed features that distinguish over the cited prior art and leave the reasoning for why those are distinguishing features to the §§102 and 103 arguments. It is enough for §101 step 2 to highlight the prior art distinguishing features as constituting the “significantly more.”

With this conceptual framework for arguing “significantly more,” the argument may be readily enhanced by weaving in the detailed specific ways disclosed in the cited prior art for performing the patent ineligible abstract idea, the detailed claimed limitations distinguishing over the cited prior art that constitute yet another specific way to do the abstract idea, as well as the additional helpful characteristics of “significantly more” identified by the Supreme Court including the technological problems in the conventional art solved by the claimed features and how the computer’s functionality is improved by the claimed features. This approach provides a more robust presentation of “significantly more” for the §101 step 2 analysis.

#### B. Improvement in a Technical Field or in Another Technology

The *Alice* Supreme Court cited *Diehr* as an example of a patent eligible “significantly more” claim, emphasizing how *Diehr*’s use of an otherwise patent ineligible abstract idea (the well-known Arrhenius mathematical equation), to determine when to open a mold in a rubber molding process, improved an existing technological process by solving some technological

problem in the conventional industry practice for rubber molding.<sup>49</sup> The computerized use of the Arrhenius equation in the computer arts was used to improve another technology – rubber molding. However, the improvement or “technical problem” solved was not recited in the claim. As such, this “technical problem solved” argument would benefit from any specification disclosure of some technical problem solved, similar to the “technical character” disclosures in European patent applications (see discussion below).

An example of the improvement in technology/technical problem solved argument can be found in *Card Verification*. There, the abstract idea was transaction verification – a fundamental economic practice. However, the court noted that the claim “not only recites a process for verifying transaction information, it also involves a protocol for ***making the communication system itself more secure***. . . . even though the method does not result in the physical transformation of matter . . . it utilizes a system for modifying data that may have a ***concrete effect in the field of electronic communications***.”<sup>50</sup> This is similar to the Supreme Court’s characterization of *Diehr*, where the claim is not simply directed to an abstract idea (the Arrhenius equation) but rather to solving a technological problem in another technology (rubber molding process). In *Card Verification*, the technical problem was non-secure communications in “another technology,” *i.e.*, electronic communications.

If possible, advantages in the “significantly more” analysis can be had by highlighting any technological problems solved by claimed features, whether in the same technology field, or in another technology.

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<sup>49</sup> *Alice*, 134 S. Ct. at 2358.

<sup>50</sup> *Card Verification*, 2014 U.S. Dist. LEXIS 137577 at \*14-15.

### C. Improvement in the Computer’s Functionality and Specialized Software/Algorithm

Another example of “significantly more” is some claimed feature that improves the functioning of the computer itself.<sup>51</sup> Presumably, if some computer function is “improved,” it should no longer be a “generic” computer function. But, at the same time, it seems insufficient to merely recite a more “efficient,” “faster,” or even “improved” computer function. The devil should be in the claimed details of *how* some computer functionality is performed that (a) takes that computer functionality out of the world of “generic” and/or (b) leads to an improvement in the functioning of the computer itself. This “how” or some “special software” was what the Justices were looking for from Alice’s counsel during oral arguments.<sup>52</sup> The fact that Alice’s counsel admitted that a 2<sup>nd</sup> year engineering class or someone sitting in a coffee shop in Silicon Valley could write the code for the claimed invention over a weekend clearly meant there was no specialized, non-generic, computer software being claimed that could be considered as improving the functioning of the computer itself.<sup>53</sup> The distinction is between some “generic” computer programming that merely carries out the abstract idea versus some specialized programming that improves the functioning of the computer itself. Any specialized software program or algorithm disclosed and claimed that can be characterized as improving the functioning of the computer itself helps the “significantly more” inquiry of §101 step 2.

For example, in *Card Verification*, the claims survived a §101 challenge early in litigation in part because the court made a plausible interpretation of the claim to include a *pseudorandom tag generating software*.<sup>54</sup> In *Salesforce.com*, a PTAB panel decision on CBM review held that the claims at issue were patent ineligible under §101, in part because “the claims do not recite a

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<sup>51</sup> *Alice*, 134 S. Ct. at 2359.

<sup>52</sup> *Alice*, oral argument pp. 10, 13, 18, 19

<sup>53</sup> *Id.* at pp. 5, 12

<sup>54</sup> *Card Verification*, 2014 U.S. Dist. LEXIS 137577 at \*12.

*specialized algorithm* that could move the claims from the abstract to the concrete.”<sup>55</sup> Therefore, if there is some specialized software in the claim, one can argue that it improves some functioning of the computer itself.

Actually including claim language directed to a specialized software program is important. For example, in *Accenture*, the patent’s specification contained detailed descriptions of various software components across almost one hundred columns of text.<sup>56</sup> Accenture argued that the complexity and detail of the specification demonstrates that the claimed invention is an advance in computer software, and not just an abstract idea.<sup>57</sup> However, the Federal Circuit held that the computer-implemented claims were patent ineligible because “[a]lthough the specification of the [asserted patent] contains very detailed software implementation guidelines, the system claims themselves only contain generalized software components arranged to implement an abstract concept on a computer.”<sup>58</sup>

## **V. Technological Arts Test vs Technological Link**

In the latest Federal Circuit case post-*Alice*, there was little surprise that on the third trip back to the Federal Circuit, now with the *Alice* guidance, Ultramercial’s claims were held patent ineligible.<sup>59</sup> However, despite applying the Mayo two-part §101 test, Judge Mayer also adds, in *dicta*, a “technological arts test.”<sup>60</sup> In the *Alice* concurrence, Justices Sotomayor, Ginsburg, and Breyer stated that business method claims and claims to organizing human activity are not patent

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<sup>55</sup> *Salesforce.com Inc. v. Virtualagility, Inc.*, CBM 2013-00024, pp.23-24 (PTAB, Sept. 16, 2014).

<sup>56</sup> *Accenture Global Servs., LLC v. Guidewire Software, Inc.*, 728 F.3d 1336, 1338 (Fed. Cir. 2013).

<sup>57</sup> *Id.* at 1344.

<sup>58</sup> *Id.* at 1345.

<sup>59</sup> *Ultramercial, Inc. v. Hulu, LLC*, 2014 U.S. App. LEXIS 21633 (Fed. Cir. Nov. 14, 2014)

<sup>60</sup> *Id.* at \*17 (Mayer J., concurring); *see also, I/P Engine, Inc. v. AOL Inc.*, 2014 U.S. App. LEXIS 15667 \*27-33 (Fed. Cir. Aug. 15, 2014) (Mayer J., concurring).

eligible under §101.<sup>61</sup> Similarly, for Judge Mayer, claims to non-technological disciplines, such as business, law, or the social sciences, are not patent eligible subject matter.<sup>62</sup> And, patent eligible claims must be directed to a technological objective, set out with a precise set of instructions for achieving it. “Precise instructions for implementing an idea confine the reach of a patent, ensuring that the scope of the claims is commensurate with their technological disclosure.”<sup>63</sup>

However, the *Alice* decision only identified *Mayo*’s two part test, and not any “technological arts test.” The *Alice* decision did not bar entire non-technological disciplines. As noted above, only three of the Justices may have held such a view, but that is not the holding of *Alice*.

During oral arguments in *Alice*, the Justices asked counsel representing the U.S. for an example of a business method claim that should be patent eligible. Counsel’s response was “a process for additional security point-of-sale credit card transactions using particular encryption technology, that...makes conduct of business more efficient or effective...a technological link...”<sup>64</sup> Unlike Judge Mayer’s ban on entire non-technological disciplines, counsel’s distinction is merely having a “technological link” – the use of a particular encryption process for this business method for credit card transactions. Certainly, a sufficient technological link may constitute “significantly more” under *Mayo* step 2.

Judge Mayer grounded his technological arts test in the Supreme Court’s favorable consideration of both the “improvement in technology” and the “improvement in the functioning of the computer itself.”<sup>65</sup> Although these considerations by the Supreme Court do not rise to Judge

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<sup>61</sup> *Alice*, 134 S. Ct. at 2360 (Sotomayor J., concurring).

<sup>62</sup> *Ultramercial*, 2014 U.S. App. LEXIS 21633 at \*26-27.

<sup>63</sup> *Id.* at \*30.

<sup>64</sup> *Alice* oral argument p.50

<sup>65</sup> *Ultramercial*, 2014 U.S. App. LEXIS 21633 at \*26.

Mayer's ban on entire non-technological disciplines, they are related to the aforementioned "technological link." The *Alice* Court's twin considerations for patent eligibility also appear similar to the European "technical effect" requirement for computer-implemented inventions, grounded in the "technicality" requirement for an "invention" within the meaning of Article 52(1) of the European Patent Convention. Some European commentators used to begrudge their "technical effect" requirement in comparison with the more generous US practice that supported patent eligibility simply by implementation on a computer (the "special purpose computer" rationale from *Alappat*). With the *Alice* decision clarifying that simply implementing an otherwise patent ineligible abstract idea on a generic computer is insufficient to satisfy patent eligibility, the US standard for computer-implemented inventions may be considered to parallel the European standard.

Going forward, expect to see new applications written with more descriptions of the conventional art, technological objectives, technical problems in the conventional art solved by the invention, and improvements in technology. As for computer-implemented features, a robust specification should include a multi-tiered disclosure of supporting algorithm at different levels of detail and with different alternatives – to preserve some scope of protection for potential means-plus-function (MPF) claim elements, as well as to include more potential candidates for "significantly more" at varying degrees of detail. Claims should recite the technological "how" or the "technological link" that results in the improvement in technology or improvement in the functioning of the computer itself. Dependent claims should be used for increasingly detailed specifics of that "how." Claims must also continue to recite a computer, some hardware, and/or MPF claim elements to avoid characterization of the claim as being just a mental process and/or something done by paper and pencil. Continuation application practice may also be reconsidered

so as to have an initial patent application with detailed specialized software recited in the claims and a continuation application for gradually broader claims.

## **VI. What's Next?**

In the post-*Alice* world, there are significant disadvantages and increased scrutiny for business method and financial system claims because mere implementation of a business method or financial system on a computer is not enough. There is also a wide disparity in the post-*Alice* decisions from district court judges, PTAB administrative law judges, and USPTO examiners. It ranges from the examiners and PTAB decisions adopting abstract ideas that essentially repeat the entire claim (see, for example, the above discussion of *Ex Parte Cote*) to one district court judge coming up with a different test for patent eligibility despite *Alice*.<sup>66</sup> The five Federal Circuit decisions post-*Alice* addressed claims to business methods and pure data.<sup>67</sup> Federal Circuit guidance is needed for a patent eligible computer-implemented software invention. Until then, the various strategies for overcoming a §101 challenge detailed in this article should help shape prosecution, litigation, and new application drafting.

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<sup>66</sup> *McRO, Inc. v. Namco Bandai Games Am., Inc.*, 2014 U.S. Dist. LEXIS 135212 (C.D. Cal. Sept. 22, 2014). The court initially considered the claims covering an approach to automated 3D computer animation, on their face, to be “tangible” and not an abstract idea. But then, the court proceeded element by element, subtracting out conventional features and then asking if what’s left is reciting something at a high level of generality, and whether this something left is an abstract idea. “[W]here a claim recites tangible steps, but the only new part of the claim is an abstract idea, that may constitute a claim to an abstract idea.” This is not *Mayo*’s two part test and ignores consideration of the claim as a whole.

<sup>67</sup> *Digitech Image Techs., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)(claims to data itself not patent eligible); *Planet Bingo, LLC v. VKGS LLC*, 2014 U.S. App. LEXIS 16412 (Fed. Cir. Aug. 26, 2014)(claims to managing/playing Bingo using a computer not patent eligible); *I/P Engine*, 2014 U.S. App. LEXIS 15667 (claims to information searching on the internet using a computer, combining content, e.g., guidebook for museums, with collaborative data, e.g., what other people thought about those museums, not patent eligible); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014)(claims to a contractual relationship by establishing transaction performance guaranties not patent eligible); *Ultramercial*, 2014 U.S. App. LEXIS 21633 (claims for showing an advertisement before delivering free content over the internet using a computer not patent eligible).